

U.S. Patent Application Serial No. 10/531,952  
Response filed June 9, 2009  
Reply to OA dated January 12, 2009

**REMARKS**

Claims 1-14 are pending in this application, with claims 1 and 9-14 withdrawn from consideration. No amendment is made in this Response. It is believed that this Response is fully responsive to the Office Action dated January 12, 2009.

**Claims 2, 3, and 6-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 of copending Application No. 10/551,872. (US 2006/0194899) (Office action paragraph no. 2)**

The rejection is obviated by the filing of a terminal disclaimer over USSN 10/551,872. The Terminal Disclaimer papers are filed concurrently with this Response.

**Claims 2 and 7 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bastioli et al. (WO 02/059199) in view of Kanamori et al. (U.S. 6,262,184) with evidence provided by the Showa Product Data page for Bionolle (2007). (Office action paragraph no. 3)**

The rejection of claims 2 and 7 is respectfully traversed, and reconsideration is requested.

The Examiner states that Bastioli WO '199 discloses a mixture of (A) an aromatic-aliphatic polyester, (B) an aliphatic polyester, and (C) a polylactic acid polymer, which would generally correspond to components (B), (C) and (A), respectively, in claim 2. The Examiner refers to Ecoflex in Example 1, page 13, as meeting the limitations on the glass transition temperature and heat of crystal melting for component (B) in claim 2. With regard to component (C) in claim 2, the

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Examiner cites the use of Bionelle 1903 in Example 11 of the reference. The Examiner states that this has a glass transition temperature meeting the limitation in claim 2, and the Examiner provides a rationale (top of page 4 of the Office action) arguing that it would inherently meet the heat of crystal melting limitation.

The Examiner states that Bastioli does not disclose the compositional ratios of the components in claim 2. In particular, the lactic acid content in Bastioli is below the range of 70-90 mass% required by claim 2. The Examiner cites Kanamori as disclosing a biodegradable resin comprising polylactic acid and aliphatic polyester carbonate in a ratio of 95/5 to 5/95.

In traversing the rejection, Applicant argues that the rejection is based on modifying the content of lactic acid based resin in Bastioli based on Kanamori, but that there is no suggestion or motivation in the references for such a modification.

Applicant concurs with the Examiner that Bastioli discloses a composition with (A) a lactic acid based resin, (B) an aromatic aliphatic polyester, and (C) an aliphatic polyester. In Bastioli, these components are designated (C), (A) and (B), respectively.

However, Bastioli generally discloses that (A+B) is 40-70% and (C) is 6-30%, which would correspond in the designation of claim 2 to lactic acid based resin component (A) being 6-30%, and the sum of (B+C) being 40-70%.

By contrast, claim 2 requires that lactic acid based resin (A) plus aromatic aliphatic polyester (B) are present in an amount of 90-70%, while (B) is present at 5-25%, which would inherently limit lactic acid based resin (A) to **at least 45%**, well above the 30% maximum in Bastioli.

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The rejection is based on modifying Bastioli based on Kanamori's teaching of polylactic acid/aliphatic polyester carbonate in the range from 95/5 to 5/95. The Examiner bases this on the disclosure in Kamamori that biodegradability, tensile strength and flexural strength are increased as lactic acid content is increased toward 90%. The Examiner states that this would represent an optimization of Bastioli.

However, Applicant submits that Bastioli is clearly already "optimized" for its given component combination. Bastioli's teaching of polylactic acid at 6-30% is very clear (see abstract), and the Examiner's proposed modification would require an enormous modification of this value away from the range taught in Bastioli.

Moreover, Bastioli's invention is clearly based on compositions having a **ternary** mixture (polylactic acid, aromatic-aliphatic polyester, aliphatic polyester; see page 4, two lines from bottom, to page 4, line 11). Bastioli clearly indicates that the effects of this combination are **surprising relative to binary systems** (see prior art discussed on page 3, and object in page 3, last paragraph). However, the Examiner's argument is based on effects of polylactic acid in Kamamori's invention, which is based on a **binary** system of polylactic acid (A) and aliphatic polyester carbonate (B). Therefore, there is no motivation based on Kanamori to modify Bastioli. Moreover, the compositional ratios of Kanamori's invention, and the effects seen as a result of these compositional ratios, would not be expected to apply to Bastioli's system, given Bastioli's teachings regarding the effects relative to binary systems.

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Therefore, there is no basis in Kanamori for modification of Bastioli's system and, in fact, Bastioli's system is clearly already optimized at the disclosed amount of 6-30% lactic acid based resin. "Optimization" of Bastioli's system would not result in the limitations of the present claims.

Claims 2 and 7 are therefore not obvious over Bastioli and Kanamori, taken separately or in combination.

**Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over Bastioli et al. (WO 02/059199) in view of Kanamori et al. (U.S. 6,262,184) with evidence provided by the Showa Product Data page for Bionolle (2007), further in view of Wypych (2000). (Office action paragraph no. 4)**

The Examiner states that Bastioli teaches that inorganic fillers may be employed at 0.05 to 70%, which overlaps the range in claim 3. Wypych is cited for disclosing that the particle size of 1 to 5  $\mu\text{m}$  would be a typical particle size.

The rejection is respectfully traversed, and reconsideration is requested. This rejection is based on a combination of Bastioli and Kanamori as in the rejection of base claim 2, above. The above arguments traversing the rejection of claim 2 are applicable to the present rejection.

**Claims 4-5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bastioli et al. (WO 02/059199) in view of Kanamori et al. (U.S. 6,262,184) with evidence provided by the**

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**Showa Product Data page for Bionolle (2007), further in view of Downie et al. (US 2001/0027225).** (Office action paragraph no. 5)

The Examiner states that Bastioli discloses additives, but does not disclose a carbodiimide compound. Downie is cited for disclosing a process for manufacturing polymer, in which a carbodiimide can be used as a degradant.

The rejection is respectfully traversed, and reconsideration is requested. This rejection is based on a combination of Bastioli and Kanamori as in the rejection of base claim 2, above. The above arguments traversing the rejection of claim 2 are applicable to the present rejection.

**Claim 6 is rejected under 35 U.S.C. §103(a) as being unpatentable over Bastioli et al. (WO 02/059199) in view of Kanamori et al. (U.S. 6,262,184) with evidence provided by the Showa Product Data page for Bionolle (2007), further in view of Akao et al. (US 5,814,497).** (Office action paragraph no. 6)

The Examiner cites Bastioli and Kanamori as teaching use of colorings and pigments, but states that these references do not disclose use of hiding agents meeting the limitation of claim 6. The Examiner cites Akao as teaching biodegradable polymers including inorganic pigments having a refractive index of 2.0 or more.

The rejection is respectfully traversed, and reconsideration is requested. This rejection is based on a combination of Bastioli and Kanamori as in the rejection of base claim 2, above. The above arguments traversing the rejection of claim 2 are applicable to the present rejection.

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**Claim 8 is rejected under 35 U.S.C. §103(a) as being unpatentable over Bastioli et al. (WO 02/059199) in view of Kanamori et al. (U.S. 6,262,184) with evidence provided by the Showa Product Data page for Bionolle (2007), further in view of Obuchi et al. (US 6,916,950).**

(Office action paragraph no. 7)

The Examiner notes that claim 8 is a product-by-process claims, which is examined based on its structure and composition. The Examiner states that the process limitation of claim 8 does not necessarily carry patentable weight. The Examiner cite Obuchi for disclosing crystallizing a resin at 85-125 °C, and states that it would be obvious to take this additional step in Bastioli's food containers.

The rejection is respectfully traversed, and reconsideration is requested.

This rejection is based on a combination of Bastioli and Kanamori as in the rejection of base claim 2, above. The above arguments traversing the rejection of claim 2 are applicable to the present rejection.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosures: Petition for Extension of Time  
Terminal Disclaimer

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